**Purpose**:

To identify and determine cold reacting antibodies detected at the antibody screen or at ABO Rh typing.

**Background:**

Investigation into a possible cold antibody is done typically if patient has history of cold agglutinin disease or there are discrepancies in the patients ABO/Rh type.

A Cold Panel may be indicated when any of the following occurs:

* ABO discrepancy is detected during ABO testing.
* The panel for the warm reactive antibodies is inconclusive with a stronger reaction at 370C than the antiglobulin phase.
* Immediate spin crossmatch is positive when the antibody screen was negative.

**Procedure:**

|  |  |  |
| --- | --- | --- |
| **Step** | **Action** | |
|  | Prepare a 3-5% patient red cell suspension using saline. | |
|  | * Label tubes 1-11 according to procedure for antibody panel setup. Label one tube for autocontrol. | |
|  | * Add 1 drop patient 3-5% red cells suspension and 2 drops patient plasma to the tube labeled autocontrol. * Add 1 drop of each reagent panel cell 1-11 to their respective tubes and 2 drops of patient plasma to each tube. | |
|  | * Mix and incubate at Room Temperature (RT) 15-30 minutes:   + Centrifuge per established guidelines.   + Dislodge the cell buttons gently.   + Examine macroscopically for agglutination and hemolysis.   + Grade and record the results. | |
|
|  | Interpret the reactions as follows: | |
| **If agglutination or lysis is…** | **Then…** |
| * Present | * Reactions are positive. |
| * Absent | * Reactions are negative. |

|  |  |  |
| --- | --- | --- |
|  | * + - Mix and incubate at 4 C for 30-60 minutes:       * Centrifuge per established guidelines.         + ***Note:*** *Do not allow 4 C tests to warm during centrifugation. If a cold room in which a centrifuge may be placed is not available, return the centrifuged tubes to the refrigerator for 5 minutes before reading.* * Dislodge the cell buttons gently. * Examine macroscopically for agglutination and hemolysis. * Grade and record the results. | |
|  | Interpret the reactions as follows: | |
| **If agglutination or lysis is…** | **Then…** |
| Present | Reactions are positive. |
| Absent | Reactions are negative. |
|  | * Determine the antibody specificity and/or perform additional studies as necessary per Flowchart A. | |

**References:**

AABB Technical Manual, Current Edition

Judd’s Methods in Immunohematology, Current Edition

**Flowchart A: Process Flow for Cold Antibody Panel**

Test Results at RT (20-250C), and at 40C

POS NEG

Positive Autocontrol Negative Autocontrol

All cells POS Some or all cells POS

Probable Cold Autoantibody Not a Cold antibody

Probable Cold Alloantibody

Perform Patient antibody screen using Prewarm IAT procedure. If negative, crossmatch can be done using this method.

**Note:**

Cold antibodies typically exhibit stronger reactions at cold temperatures and weaker reactions at warm temperatures.